

## Researchers identify stress-hormone differences among gay men

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Cortisol is a life sustaining adrenal hormone essential to maintaining the natural balance of the body. It is often referred to as "the stress hormone," as cortisol influences, regulates, and modulates many of the changes that occur in the body in response to stress.

Diurnal cortisol studies measure the level of cortisol in the body at various times during the day to examine possible adrenal imbalances. The majority of these diurnal cortisol studies have been conducted among white heterosexuals, with very little research examining HPA-axis functioning between different minorities. However, individuals who identify as both sexual and racial minorities may experience increased stigma and discrimination that can affect this HPA-axis functioning.

To address this need for more expansive research, investigators at the College of Global Public Health (CGPH) Center for Health Identity Behavior & Prevention Studies (CHIBPS), led by Stephanie H. Cook, DrPH, conducted a study, "Cortisol profiles differ by race/ethnicity among young sexual minority men" published in the journal *Psychoneuroendocrinology*, examining differences in diurnal cortisol rhythm between young, self-identified, white gay men (WGM) and black gay men (BGM).

In the study of healthy men (n=68) with a mean age of twenty-three, Dr. Cook and colleagues utilized a daily diary research design which consisted of researchers collecting four saliva samples daily for five days to measure their [cortisol levels](#) at different times of day throughout the

week.

"Sexual minorities are more likely to experience discrimination based on their sexual orientation compared to heterosexual individuals," said Dr. Cook. "Recent research shows that sexual orientation-related stress and stigma can modulate HPA-axis reactivity among sexual minority individuals compared to heterosexual individuals."

The research data showed a flattened diurnal cortisol curve between BGM to WGM, with statistically significant differences found in bedtime levels of cortisol. In the current study, the observed flattened diurnal pattern observed among BGM combined with their elevated evening levels suggests less daily variation in cortisol that may be indicative of an unhealthy stress response among BGM.

While beyond the scope of the current analysis, these findings suggest that social factors associated with being a 'double minority' may differentially calibrate circadian HPA-axis functioning in BGM compared to WGM.

"We must conduct additional studies to confirm these study findings because in the current study we cannot make definitive conclusions about our 'double minority' hypothesis because we did not have a majority Black referent group," cautions Dr. Cook. "However, with this being said, we believe this research study presents a first step in understanding differences in the HAP axis functioning among racial/ethnic and [sexual minority](#) men."

The current study expands on previous research indicating that those individuals at the intersection of multiple stigmatized identities may indeed experience distinct diurnal cortisol profiles which should be explored further.

"The results of the present study expand health disparities research that has often focused solely on race/ethnic differences by using approaches that assess intersecting identities, which is the cornerstone of the work we undertake at CHIBPS," said Dr. Cook. "This study highlights these disparities and calls for further research on these topics."

**More information:** Stephanie H. Cook et al, Cortisol profiles differ by race/ethnicity among young sexual minority men, *Psychoneuroendocrinology* (2017). [DOI: 10.1016/j.psyneuen.2016.10.006](https://doi.org/10.1016/j.psyneuen.2016.10.006)

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